

19 09:53:17 2001

us-09-50.

566/Product: angiostatin #status experimental <AST>
 580,581-810/Product: plasmin #status experimental <MAT>
 580/Domain: plasmin chain A #status experimental <CHA>
 183-181/Domain: kringle homology <KR1>
 185-262/Domain: kringle homology <KR2>
 275-352/Domain: kringle homology <KR3>
 377-454/Domain: kringle homology <KR4>
 481-560/Domain: kringle homology <KR5>
 550-580,581-810/Product: microplasmin #status experimental <MMT>

Query Match 99.7%; Score 1535; DB 1; Length 810;
 Best Local Similarity 99.6%; Pred. No. 7.1e-105;
 Matches 259; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 VYLSECKTGNGKNYRGTMSTKNGITCQKWSSTSPHRPRFSPATHPSEGLEENYCRNPDN 60
 Db 98 VYLSECKTGNGKNYRGTMSTKNGITCQKWSSTSPHRPRFSPATHPSEGLEENYCRNPDN 157
 Qy 61 DPQGPWCYTDDPEKRYDYCDILECEECHMCSGENYDGGKISKTMSGLECAWDSQSPHAH 120
 Db 158 DPQGPWCYTDDPEKRYDYCDILECEECHMCSGENYDGGKISKTMSGLECAWDSQSPHAH 217
 Qy 121 GYIPSKFPNKNLKNYCRNPDRELRPWCFTTDPNKRWELCDIPRCTTPPPSSGPTYQCLK 180
 Db 218 GYIPSKFPNKNLKNYCRNPDRELRPWCFTTDPNKRWELCDIPRCTTPPPSSGPTYQCLK 277
 Qy 181 GTGENYRGNAVTVSGHTCQHWSAQTPTHHTERTPENFPCKNLDENYCRNPDGKRAPWCHT 240
 Db 278 GTGENYRGNAVTVSGHTCQHWSAQTPTHHTERTPENFPCKNLDENYCRNPDGKRAPWCHT 337
 Qy 241 TNSQVRWEYCKIPSCDSSPV 260
 Db 338 TNSQVRWEYCKIPSCDSSPV 357

510 520
 269
 269

RESULT 2

B30848

plasmin (EC 3.4.21.7)

-hesus macac
 (aque)

30	271	17.6	89	2	A60140	plasmin (EC 3.4.21
31	268	17.4	123	2	C61545	plasmin (EC 3.4.21
32	241.5	15.7	937	2	A45082	neurotrophic recep
33	240	15.6	943	2	B45082	neurotrophic recep
34	237.5	15.4	946	1	A47299	ror-related recept
35	233	15.1	603	2	S28941	coagulation factor
36	214	13.9	558	2	JC5878	plasma hyaluronan
37	210	13.6	560	1	JC4795	plasma hyaluronan
38	201	13.1	291	2	I38098	t-plasminogen acti
39	198	12.9	615	1	KFHU12	coagulation factor
40	190.5	12.4	593	2	S45281	coagulation factor
41	188.5	12.2	655	1	A46688	hepatocyte growth
42	178.5	11.6	806	2	T18840	hypothetical prote
43	165	10.7	433	1	JN0560	u-plasminogen acti
44	153	9.9	442	1	UKPG	u-plasminogen acti
45	151	9.8	432	1	S18932	u-plasminogen acti

ALIGNMENTS

RESULT 1
PLHU
plasmin (EC 3.4.21.7) precursor [validated] - human
N;Alternate names: plasminogen precursor [misnomer]
N;Contains: angiostatin; microplasmin; plasminogen
C;Species: Homo sapiens (man)
C;Date: 24-Apr-1984 #sequence_revision 02-Dec-1994 #text_change 15-Sep-2000
C;Accession: A35229; I52242; A26646; I62738; I84609; S03735; A00929; A04627; A04625;
R;Petersen, T.E.; Martzen, M.R.; Ichinose, A.; Davie, E.W.
J. Biol. Chem. 265, 6104-6111, 1990
A;Title: Characterization of the gene for human plasminogen, a key proenzyme in the f
A;Reference number: A35229; MUID:90202879
A;Accession: A35229
A;Molecule type: DNA
A;Residues: 1-810 <PET>
A;Cross-references: GB:J05286; GB:M34276; NID:g190064; PIDN:AAA60113.1; PID:g387026
A;Experimental source: leukocyte; lung fibroblast
R;Malgaretti, N.; Bruno, L.; Pontoglio, M.; Candiani, G.; Meroni, G.; Ottolenghi, S.;
Biochem. Biophys. Res. Commun. 173, 1013-1018, 1990
A;Title: Definition of the transcription initiation site of human plasminogen gene in
A;Reference number: I52242; MUID:91097523
A;Accession: I52242
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-16 <MAL1>
A;Cross-references: GB:M62890; NID:g190092; PIDN:AAA36454.1; PID:g553613
R;Forsgren, M.; Raden, B.; Israelsson, M.; Larsson, K.; Heden, L.O.
FEBS Lett. 213, 254-260, 1987
A;Title: Molecular cloning and characterization of a full-length cDNA clone for human
A;Reference number: A26646; MUID:87162490
A;Accession: A26646
A;Molecule type: mRNA
A;Residues: 1-471, 'D', 473-810 <FOR>
A;Cross-references: GB:X05199; NID:g35530; PIDN:CAA28831.1; PID:g35531
A;Experimental source: liver
R;Malinowski, D.P.; Sadler, J.E.; Davie, E.W.
Biochemistry 23, 4243-4250, 1984
A;Title: Characterization of a complementary deoxyribonucleic acid coding for human a
A;Reference number: I45961; MUID:85023311
A;Accession: I62738
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 292-471, 'D', 473-810 <MAL2>
A;Cross-references: GB:K02922; NID:g190112; PIDN:AAA60124.1; PID:g387031
A;Accession: I84609
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 367-419 <MAL3>
A;Cross-references: GB:K02921; NID:g190110; PIDN:AAA60123.1; PID:g190111
R;Brunisholz, R.A.; Lerch, P.G.; Schaller, J.; Rickli, E.E.; Lergier, W.; Manneberg,
Eur. J. Biochem. 114, 465-470, 1981
A;Title: Comparison of the primary structure of the N-terminal CNBr fragments of huma

- A:Reference number: S03735; MUID:81212097
A:Accession: S03735
A:Molecule type: protein
A:Residues: 20-71, 'E', 73-76 <BRU>
R:Sottrup-Jensen, L.; Petersen, T.E.; Magnusson, S.
Submitted to the Atlas, July 1977
A:Reference number: A00929
A:Accession: A00929
A:Molecule type: protein
A:Residues: 20-71, 'E', 73-85, 87-106, 'D', 108-360, 'E', 362-810 <SOR>
R:Wiman, B.
Eur. J. Biochem. 76, 129-137, 1977
A:Title: Primary structure of the B-chain of human plasmin.
A:Reference number: A04627; MUID:77225245
A:Accession: A04627
A:Molecule type: protein
A:Residues: 581-810 <W1>
R:Wiman, B.; Wallen, P.
Eur. J. Biochem. 50, 489-494, 1975
A:Title: Structural relationship between "glutamic acid" and "lysine" forms of human plasminogen.
A:Reference number: A04625; MUID:75093329
A:Accession: A04625
A:Molecule type: protein
A:Residues: 20-50, 'Q', 51-71, 'E', 73-85, 87-100 <W12>
R:Wiman, B.; Wallen, P.
Eur. J. Biochem. 58, 539-547, 1975
A:Title: Amino-acid sequence of the cyanogen-bromide fragment from human plasminogen the
A:Reference number: A04626; MUID:76043692
A:Accession: A04626
A:Molecule type: protein
A:Residues: 483-507, 'E', 509-604 <W13>
R:Robbins, K.C.; Bernabe, P.; Arzadon, L.; Summaria, L.
J. Biol. Chem. 248, 1631-1633, 1973
A:Title: The primary structure of human plasminogen. II. The histidine loop of human plasminogen.
A:Reference number: A92125; MUID:73149248
A:Accession: A92125
A:Contents: annotation; active site
R:Groskopf, W.R.; Summaria, L.; Robbins, K.C.
J. Biol. Chem. 244, 3590-3597, 1969
A:Title: Studies on the active center of human plasmin. Partial amino acid sequence of a
A:Reference number: A92048; MUID:69234739
A:Accession: A92048
A:Contents: annotation; active site
R:Frexler, M.; Valli, Z.; Pathy, L.
J. Biol. Chem. 257, 7401-7406, 1982
A:Title: Structure of the omega-aminocarboxylic acid-binding sites of human plasminogen.
A:Reference number: A92382; MUID:82213905
A:Accession: A92382
A:Contents: annotation; omega-aminocarboxylic acid binding sites
R:Valli, Z.; Pathy, L.
J. Biol. Chem. 259, 13690-13694, 1984
A:Title: The fibrin-binding site of human plasminogen. Arginines 32 and 34 are essential
A:Reference number: A92459; MUID:85054794
A:Accession: A92459
A:Contents: annotation; fibrin binding site; omega-aminocarboxylic acid binding site
R:Cao, Y.; Ji, R.W.; Davidson, D.; Schaller, J.; Marti, D.; Soehndel, S.; McCance, S.G.;
J. Biol. Chem. 271, 29461-29467, 1996
A:Title: Kringle domains of human angiotensin. Characterization of the anti-proliferative
A:Reference number: A58811; MUID:97067211
A:Accession: A58811
A:Contents: annotation
R:Linen, H.R.; Ugwu, F.; Bini, A.; Collen, D.
Biochemistry 37, 4699-4702, 1998
A:Title: Generation of an angiotensin-like fragment from plasminogen by stromelysin-1 (M
A:Reference number: A58812; MUID:9548733
A:Accession: A58812
A:Contents: annotation
R:Tullinsky, A.; Mulichak, A.M.
submitted to the Brookhaven Protein Data Bank, July 1991
A:Reference number: A51341; PDB:1PK4
A:Contents: annotation; X-ray crystallography, 1.9 angstroms, residues 376-454
R:Tullinsky, A.; Wu, T.P.
submitted to the Brookhaven Protein Data Bank, July 1991
A:Reference number: A51488; PDB:2PK4
A:Contents: annotation; X-ray crystallography, 2.25 angstroms, residues 375-454
R:T.P.; Tullinsky, A.
submitted to the Brookhaven Protein Data Bank, August 1993
A:Reference number: A51911; PDB:1PKR
- A:Contents: annotation; X-ray crystallography, 2.48 angstroms, residues 102-181
R:Padmanabhan, K.; Tullinsky, A.
submitted to the Brookhaven Protein Data Bank, April 1994
A:Reference number: A52408; PDB:1PMK
A:Contents: annotation; X-ray crystallography, 2.25 angstroms, residues 377-454
R:Tullinsky, A.; Mathews, I.I.
submitted to the Brookhaven Protein Data Bank, December 1995
A:Reference number: A65244; PDB:1CEA
A:Contents: annotation; X-ray crystallography, 2.1 angstroms, residues 102-181
R:Tullinsky, A.; Mathews, I.I.
submitted to the Brookhaven Protein Data Bank, December 1995
A:Reference number: A65245; PDB:1CEB
A:Contents: annotation; X-ray crystallography, 2.1 angstroms, residues 102-181
R:Mulichak, A.M.; Tullinsky, A.; Ravichandran, K.G.
Biochemistry 30, 10576-10588, 1991
A:Title: Crystal and molecular structure of human plasminogen kringle 4 refined at 1.
A:Reference number: A58819; MUID:92031502
A:Accession: A58819
A:Contents: annotation
R:Wu, T.P.; Padmanabhan, K.; Tullinsky, A.; Mulichak, A.M.
Biochemistry 30, 10589-10594, 1991
A:Title: The refined structure of the epsilon-aminocaproic acid complex of human plas
A:Reference number: A58818; MUID:92031503
A:Accession: A58818
A:Contents: annotation
R:de Vos, A.M.; Ultsch, M.H.; Kelley, R.F.; Padmanabhan, K.; Tullinsky, A.; Westbrook,
Biochemistry 31, 270-279, 1992
A:Title: Crystal structure of the kringle 2 domain of tissue plasminogen activator at
A:Reference number: A39483; MUID:92118803
A:Accession: A39483
A:Contents: annotation; X-ray crystallography, 2.4 angstroms
R:Stec, B.; Teeter, M.M.; Whitlow, M.; Yamano, A.
submitted to the Brookhaven Protein Data Bank, June 1995
A:Reference number: A65980; PDB:1KRN
A:Contents: annotation; X-ray crystallography, 1.67 angstroms, residues 376-454
R:Rejante, M.; Llinas, M.
submitted to the Brookhaven Protein Data Bank, August 1996
A:Reference number: A65803; PDB:1HPJ
A:Accession: A65803
A:Contents: annotation; conformation by (1)H-NMR, residues 103-181
R:Rejante, M.; Llinas, M.
submitted to the Brookhaven Protein Data Bank, August 1996
A:Reference number: A65804; PDB:1HPK
A:Accession: A65804
A:Contents: annotation; conformation by (1)H-NMR, residues 103-181
R:Rejante, M.R.; Llinas, M.
Eur. J. Biochem. 221, 927-937, 1994
A:Title: (1)H-NMR assignments and secondary structure of human plasminogen kringle 1.
A:Reference number: A43645; MUID:94237157
A:Accession: A43645
A:Contents: annotation; conformation by (1)H-NMR, residues 96-184
R:Rejante, M.R.; Llinas, M.
Eur. J. Biochem. 221, 939-949, 1994
A:Title: Solution structure of the epsilon-aminohexanoic acid complex of human plasmi
A:Reference number: A58817; MUID:94237158
A:Accession: A58817
A:Contents: annotation; conformation by (1)H-NMR
C:Comment: Plasminogen is synthesized by the kidney and is present in plasma. Many
C:Comment: Plasminogen is converted to plasmin by plasminogen activators (see PIR:UKH
d PIR:FGHUGB).
C:Comment: Plasmin is inactivated by alpha-2-antiplasmin (see PIR:ITHUA2) immediately
rg-590, resulting in two chains connected by two disulfide bonds. Without the inhibi
C:Comment: Microplasmin is formed by autolytic cleavage of plasmin under artificial c
C:Comment: Stromelysin 1 (see PIR:KHUS1) acts on plasminogen to produce angiotatin.
ting solid tumors.
C:Genetics:
A:Gene: GDB:PLG
A:Cross-references: GDB:119498; OMIM:173350
A:Map position: 6q26-6q27
A:Introns: 17/1; 62/2; 98/1; 136/2; 183/1; 223/2; 263/1; 317/2; 366/1; 419/2; 480/1;
C:Function:
A:Description: dissolves the fibrin of blood clots; acts as a proteolytic factor in a
ns the walls of the graafian follicle; also activates the urokinase-type plasminogen
A:Pathway: fibrinolysis
C:Superfamily: plasmin; kringle homology; plasminogen-related protein precursor homol
F:1-96/Domain: plasminogen-related protein precursor homology <PLPH>
F:1-19/Domain: signal sequence #status predicted <SIG>
F:20-810/Product: plasminogen #status experimental <PRO>
F:20-96/Domain: activation peptide #status experimental <APT>